REMARKS

Claims 13, 14, 16, 18, 23-25, 28-30 and 32 are currently pending, wherein claim 31 has been canceled. Applicant respectfully requests favorable reconsideration in view of the remarks presented herein below.

In paragraph 2 of the Office Action ("Action"), the Examiner objects to claim 31 for allegedly being of improper dependent form. Claim 31 has been canceled, thereby addressing the Examiner's concerns.

In paragraph 4 of the Action, the Examiner rejects claims 13, 14, 16, 18, 23-25 and 28-32 under 35 U.S.C. §102(e) as allegedly being unpatentable over U.S. Patent No. 6,643,882 to Sotozaki et al. ("Sotozaki"). Applicant respectfully traverses this rejection.

In order to support a rejection under 35 U.S.C. §102, the cited reference must teach each and every claimed element. In the present case, claims 13, 14, 16, 18, 23-25 and 28-32 are not anticipated by Sotozaki because fails to disclose each and every claimed element as discussed below.

Independent claim 13 defines a method of cleaning a substrate of a liquid crystal display panel. The method includes, *inter alia*, jetting deionized water that carries ultrasonic waves onto a side surface of the substrate, brushing the side surface of the substrate with a brush that extends partially along the side surface of the substrate, and cleaning upper and lower surfaces of the substrate. In addition, independent claims 23 and 28 define methods for cleaning a substrate that includes, *inter alia*, jetting deionized water that carries ultrasonic waves onto the side surfaces of the substrate.

In rejecting these claims, the Examiner asserts that Sotozaki discloses a method of cleaning LCD substrates by "brushing the upper and lower and side surfaces and cleaning these

surfaces with an ultrasonic liquid spray." To support this assertion, the Examiner points to Figs. 1(a,b) 3, 4, 8, 9, 11 and 13 of Sotozaki. This assertion is unfounded for the following reasons.

Nowhere in the cited Figs, or elsewhere in Sotozaki, is there any disclosure of jetting deionized water that carries ultrasonic waves onto the *side* surfaces of the substrate. To the contrary, Sotozaki only discloses a method of cleaning the upper and lower surfaces of a substrates. Therefore, Sotozaki fails to anticipate the present invention as defined by claims 13, 14, 16, 18, 23-25 and 28-32 because Sotozaki fails to disclose each and every claimed element. Accordingly, Applicant respectfully request reconsideration and withdrawal of the rejection of claims 13, 14, 16, 18, 23-25 and 28-32 under 35 U.S.C. §102(e)

In paragraph 8 of the Action, the Examiner rejects claims 13, 14, 16, 18, 23-25 and 28-32 under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 6,202,658 to Fishkin et al. ("Fishkin") in combination with U.S. Patent No. 5,976,267 to Culkins et al. ("Culkins") and U.S. Patent No. 6,261,378 to Hashimoto et al. ("Hashimoto"). Applicant respectfully traverses this rejection.

In order to support a rejection under 35 U.S.C. §103, the Examiner must establish a *prima facie* case of obviousness. To establish a *prima facie* case of obviousness three criteria must be met. First, there must be some motivation to combine or modify the cited references. Second, there must be a reasonable expectation of success. Finally, the combination must disclose each and every claimed element. In the present case, claims 13, 14, 16, 18, 23-25 and 28-32 are patentable over the combination of Fishkin, Culkins and Hashimoto because the Examiner fails to establish a *prima facie* case of obviousness as discussed below.

In rejecting claims 13, 14, 16, 18, 23-25 and 28-32, the Examiner asserts that it would have been obvious to one skilled in the art to use the ultrasonic spray of Fishkin in the brush cleaning method of Culkins because one skilled in the art would have reasonably expected that

the use of the combined action would improve the side cleaning results. However, Fishkin explicitly teaches away from such a combination. As discussed in column 2, lines 25-44, Fishkin explicitly discloses the use of a sonic nozzle to replace side brushes due to increased cost in maintaining side brushes. Accordingly, absent proper motivation to combine the teachings of Fishkin and Culkins, the rejection of claims 13, 14, 16, 18, 23-25 and 28-32 is improper.

Furthermore, even if one skilled in the art were motivated to combine Fishkin, Culkins, and Hashimoto, which Applicant does not concede, the combination would still fail to render claims 13, 14, 16, 18, 23-25 and 28-32 unpatentable because the combination fails to disclose each and every claimed element.

Independent claims 13, 23 and 28 each define a method of cleaning a substrate that includes, *inter alia*, jetting deionized water that carries ultrasonic waves onto a side surface of the substrate, and brushing the side surface of the substrate with a brush that extends partially along the side surface of the substrate. Nowhere in Fishkin, Culkins, nor Hashimoto is there any disclosure or suggestion of a brushing the *side* surface of the substrate with a brush that *extends partially along the side surface of the substrate.* Therefore, claims 12, 23 and 28 are patentable over the combination of Fishkin, Culkins and Hashimoto for at least the reason that the combination fails to disclose each and every claimed element.

Claims 14, 16, 18, 24, 25, 29, 30 and 32 variously depend from independent claims 13, 23 and 28. Therefore, claims 14, 16, 18, 24, 25, 29, 30 and 32 are patentable over the combination of Fishkin, Culkins and Hashimoto for at least those reasons presented above with respect to claims 13, 23, and 28. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection of claims 13, 14, 16, 18, 23-25 and 28-32.

The application is in condition for allowance. Notice of same is earnestly solicited. Should the Examiner find the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at (202) 496-7500 to discuss the steps necessary for placing the application in condition for allowance. All correspondence should continue to be sent to the below-listed address.

If these papers are not considered timely filed by the Patent and Trademark Office, then a petition is hereby made under 37 C.F.R. §1.136, and any additional fees required under 37 C.F.R. §1.136 for any necessary extension of time, or any other fees required to complete the filing of this response, may be charged to Deposit Account No. 50-0911. Please credit any overpayment to deposit Account No. 50-0911.

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Respectfully submitted,

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